AGRICULTURAL DEPARTMENT.

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PUBLISHER'S NOTICE—All communications intended for this department should be addressed to Prof. J. P. Stelle, Fort Worth, Tex.

COME DOWN NEXT WINTER.

Texas is just entering upon a regular agricultural boom-no doubt of it. Her people have been feeling that way through several years past, and with each succeeding year the feeling has been more pronounced. And now have come the excellent crops of the present season to set it off with a rush; so stand from under, ye old fogies, who say farming cannot be made to pay. The progressive people of Texas are going to show up your mistake (or whatever else one might see fit to call it) by practical demonstration. More land will be made ready for the plow in the course of the next winter than ever before characterized the same length of time in the history of any state of the Union. Every Indiention seems to be plainly pointing in that

Our greatest trouble for the coming winter will be found in a deficiency of good and and reliable farm labor. How are we to secure that necessary adjunct to our proposed progress? We have just thought up a plan for relief which, in our opinion, would work to the decided advantage of all concerned if properly looked after. Here in Texas our winter months are extremely mild. At the North they would be regarded as a season of delightful springtime. They are our best working months of the year, while the same months in the upper states are months of comparative idleness-nothing in particular to do for the reason that the weather is so cold to admit of doing much of anything

Coor these well-known facts we have based our plan, which is to invite our Northern friends, especially the young men, to come down and spend their win er's vacation" working on our farms during the time when their own farms are locked up in ice and snow. With the first wild geese of spring they could return to their Northern homes, and their farms would really not know that they had been absent. The arrangement would be a pleasant change from the monotony of a Northern winter-a kind of recreation-to say nothing of its profitableness in dollars and cent to

We could not hesitate to believe that thousands would thus spend the winter in Texas if the matter was properly laid bece them and a few favorable arrangements made for their transportation. The thing hould be pritated, for there are the best of reasons for believing that it would pro e well worth the trouble.

For our own part we can see nothing that could be urged against it in either section. What if it did render the young men of the North a little migratory in their habits? It would not hurt any of them to see more of the world than is visible from the tops of their barns; and so far as our side of the question is concerned, we have no fears hat their coming could in any way be anything whatever against Texas. We want among us, as long as they will stay, thousands of such young men as would have energy enough about them to prompt the carrying out of such a suggettion as we are making. Let us invite them down for the winter to accome acquainted with us and make some money for themselves. The acquaintance would do us all good. If such on arrangement had been working over the South generally in the times preceding thirty years ago. American history would to-day exhibit a broad plank where some of its most closely written pages are-the are we know of each other the better is for all parties.

EVEN IN HUMID LOUISIANA. Last week we published some points

made by Mr. J. Y. Gilmore in a paper read before the Audubon agricultural society of Louisinna, setting forth the existing need of general irrigation, even in that state of inusually heavy rainfal. We now have before us a paper on the same subject, read before the same somety June 11, by Mr. Gus V. Soniat. This would seem to indicate that a telling interest with reference to the importance of irrigation is springing up among the Louis anians. Without an evinced interest in this direction, two papers would scarcely have been read specially devoted to this particular subject. Then, both papers almost say as much by helding out the idea that the people of Louisiana are beginning to very well undeestand the need of artificial water supply to cross to enable their own, or any other state, for that matter, to do its best in an agricultural way, and thus be enabled to fully keep pace with the progress of the limes. They realize that irrigation must soon be regarded as an indispensable agent in all farming operations ranking high on the scale of success-a thing of equally as much importance as is the plant food in the soit. So long as there was no irrigation in this country all were on an equality as farmers without it, of course, but now, since it has come, and is being established to stay, in many localities, those localities not resorting to it, so fa. a. Dey can, must rapidly fall to the rear. Both papers make this point strong and clear.

"Irrigation! What a theme for the scientist! what a source of wealth to the agriculturist! the memory of man falls to record its beginning." says Mr. Soniat.

"In China artesian wells are known to have been used tory irrigating purposes through more than 2000 years, and the river Nile was furnished water for nourishing crops by irrigation, and qualifying them to sustain millions of human beings through ages reaching back into the misty past far beyond the historical period. Arabia, Algeria, Mexico and South America fertilize millions of acre by means of sorrowed waters; even here, in some of our Western states and territories rivers have been dammed, pipes laid in all directions and water is supplied by companies at stipulated prices; the possibility of reclaimthe much arid and waste lands is becoming more and more apparent, for artesian wells are daily becoming more potent factors in agricultural science; the deserts are about to blossom and bear fruit-the golden age is

Mr. Soniat's argument, then tends to the position that immigration is slowly but surely swinging Westward, and that it will continue to do so to the serious injury of all other regions in this country so long as those other regions neglect to show themselves equal in every respect to the irrigating regions in the far West. It is a heavy population of farmers that makes a country

productiveness of a region that draws a heavy population of farmers, and it is irrigation that makes superior productiveness. Unless the great states not now resorting to irrigation do speedily resort to it the reports of heavy and regular crops coming from the irrigating regions of the West will attract the best of their people thither, and when once there their old homes will never get them back again. But most of our states will resort to irrigation, Mr. Soniat thinks-they cannot help it if they would hold their own. And looking in imagination upon what the result will be he contin-

What a transformation do I see in the near future! Growing fields of the finest cereals and the most luscious fruits shall follow the course of water, cities shall spring up as mushrooms in the night, and millions of human beings with all their hopes, aspirations and joys shall contribute to make of this the greatest, the grandest the richest government under the broad canopy of the heavens?

ne may think that this is the dream of a visionary or the off-spring of a diseased imagination; but vardon me, a scientist such as Bousingault states that he has seen Indian corn grow on the plateau of the Andes by means of constant irrigation; is it not a well-known fact that horticulturists grow cuttings of various plants in pure well water? The purest of natural water con-tains a vast amount of mineral as well as organic matter which the plants can readily assimilate; then why should this be "too strange to be true!" Irrigation is an indis-pensable adjunct to cultivation in a dry climate and on a sandy soil, where the ground water is, at times, too far removed from the surface to be within the reach of plants. Deep-rooted plants may endure by finding their supply of moisture well down in the subsoil, but for strictly superficia' feeders there must be a regular supply of superficial moisture else, they fast and do exceedingly bad, or starve, shrivel and die

Mr. Soniat then goes on to show that water leads everything else in a sustenance of vegetable life. No matter how rich the repast of plant food offered to the feeders of the plant, it cannot take one particle without moisture. The richest lands of the prairies of Texas or the delta of Louisiana are but poverty itself without moisture to issolve the elements of plant food and fit them for assimilation by plants. A bank of clean, pounded glass would sustain plants equally as well as would the richest and finest: ils known, if entirely dry.

Thus it is plainly shown that droutheven though not of the severest type- is highly injurious to crops. Whenever the ground moisture gets so much as scarce, making what we call a "dry time," but not a drouth, the majority of plants will suffer more or less. Water, then, must be supplied by some means if we would have our crops do their best-there must not only be no drouth, but no "dry time." The culturist can not now afford to raise poor crops, therefore he must arrange to give water artificially so often as his crops need it. If natural means bring the necessary water, all well and good but according to Storer the rainfall is not sufficient to more than supply the evaporation caused by the sun throughout the season; even in Louisiana, with an annual rainfall of about sixty to sevent inches, how much of this water is utilized by the growing plant! Only a comparatively small proportion.

The people of the North are considering the importance of irrigation, and some of them are already practicing it with good success. Their entire growing season is about like what we call our spring season n the lower states of the South. If it pays to irrigate up there in their short seasons and for a single crop, enght it not to pay us much bette bere where our frostless season is fully three times the length of theirs. and where under in igation we could easily grow three crops to the rone?

We leave intelligent exans to make their own comments.

THE EVER-PRESENT HOG.

Go where you may, and you find the hog well represented. If he does not live, move and have his being there, he is yet there in the flesh, all the same. The Iowa State Register says of him that "he has rooted his way all over the commercial world; he has alarmed the rench, who have lied about as health, and he e on astonished the great German empire by poking himself within its boundaries through every loop-hole left open, despite the war that had been waged against him. He feeds the corn-grower of ur own Northern states, without regard to race, color or previous condition, and he feeds the negro cotton and tobacco growers of the South; likewise, the overseer and the proprietor of the plantation. He diets our mechanic, also our merchant, and also our merchant-marine-what there is of it-and all other marines, for that matter. In a word, he is a power in the land, and don't you forget it. He takes his exodus from the corn b 1 of the United States, where he eats up products that the farmers can not sell, and then those farmers show their appreciation of his kindness by sending him off on an excursion, all at their own expense, in the form of pickled pork, bacon, dry salt sides, hams, shoulders and pickled pig's feet. It is not thought safe to put sausage into the enumeration, for the reason that sausage is not slways-well, never mind about the sausage, anyway."

This is all pleasant reading enough and very clear in all its points save that one in which reference is made to the corn belt. The corn belt here meant is evidently that portion of the United States in which little e than corn can be raised. It it meant such portions of the country as could raise corn successfully the corn belt would be indeed a large belt. It would take in all of Texas, for we can beat the Northern states head-over-heels raising corn if we desire to do so. We don't devote our energies to corn exclusively, however, for the reason that there are other far more profitable crops we can raise, the which cost us no more han to raise corn. And we can cause the hog, and more of him, to "take his exodus" from Texas, without doing any large amount of business in over-production, than can any other so-called corn belt on

Uncle Sam's farm. Heretofore it has been thought that corn and the hog were things inseparable. This impression grew out of the fact that cold weather was indispensable in the work of pork packing? Transportation; facilities were then not at all like they are now. The only way of getting the hog to the packing

packing him, and since corn was the only hog food crop that could be raised, then hogs and corn became inseparable in the minds of the people.

Modern science has entirely east that notion to the winds, however. Railroads now take a herd of hogs further in one day than they could have been taken in one month thirty years ago. And modern science has not stopped at this accomplishment. It is now as easy a matter to pack pork at Fort Worth, Tex., as it is to pack it at either Chicago, Ill., or Cincinnati, Ohio. And the thing does not stop even at this; the season of the year cuts no kind of figure in the case. Midsummer is as good a time for packing as is any other season. At any time when the hog is made ready the packery is ready to convert it into the usual bog articles of commerce.

Experience has clearly shown that corn is by no means the best food for the hog. A little corn fed at the time of finishing it up for the packery may be all well enough, but there are many other crops easily raised in Texas, but which cannot be raised at all in the Northern "corn belt," that will develop the hog far better than corn. Sweet potatoes may be mentioned as one of these, though there are others of equal unportance. Under correct management we can raise 400 bushels of sweet potatoes to the acre in Texas, at less cost than would be volved in producing an acre of corn. It has been well settled that two bushels of sweet potatoes will go fully as far as a hog feed, in every respect, as would one bushel of corn. The average yield of corn in the socalled corn belt is about seventeen bushels to the acre. Put our average yield of sweet potatoes, say at 200 bushels to the acre, and then figure on where lies the advantage so far as relates to pork produc tion. Two hundred bushels of sweet potatoes would equal 100 bushels of corn. Thus, as you see, we have a pork-producing crop fully the equivalent of 100 bushels of corn to the acre, on an average, against the average of seventeen bushels of corn to the acre in the "corn belt."

It scarcely needs a prophet to tell even the duilest among us what all this must speedily lead to. The "corn belt" may re main in the far Northern states, if they prefer to call it by that name, but the hog belt must move away from the "corn belt." Here there is nothing whatever against hog production. Our climate is exactly suited to the animal's needs. There are no cold winters to drag it through by a resort to heavy feedings. Nature here supplies the needed heat to keep it going through the winter months-there that heat must be kept up by stuffing it with corn. If a sharply limned outlook of the times means anything, one cannot do otherwise than arrive at the conclusion that when another decade of years have rolled past all the pork of commerce will be going north instead of coming south as at present. The people of the "corn belt," such of them as do not pull up stakes and follow the hog. will be eating Texas pork and devoting their best energies to the production of whisky and glucose molasses.

AN INCH OF RAINFALL.

Persons who have made a careful and intelligent study of irrigation are pretty well agreed in the opinion that it would require water in quantity equaling one inch of rainfall, applied weekly, to thoroughly irrigate an average but thoroughly prepared soil to every requirement of ordinary crops. Of course this presumes that there is no rainfall to aid the artificial application.

The artificial application of water equalling one inch of rainfall, calls for a good deal of water to the acre, but not so much as many persons suppose. The thing appears to be one not well understood, and Therefore we find not a few expressed opinns widely at variance going through the public press just now. But the whole thing is as plain as a be if we look at it aright through the showing of a few simple figures.

Not long since a correspondent of Farm and Ranch put it that to water an acre of land count to one inch of rainfall would require 153,579 gallous of water. The statement attracted the attention of Mr. F. E. Roesler, special agent of the United States irrigation inquiry, and seeing that it was entirely "off," he at once proceeded to set matters right as follows:

An acre covers an area of a little more than two hundred and eight feet square, or is equivalent to 42,560 square feet. This number of square feet is equivalent to 6.272.640 square inches. Cover this area with water one inch deep and you have 6.272,640 cubic inches of water. Now there are 231 cubic inches in a gallon. Dividing 231 into the 6,272,640 gives you 27,154 28-100 gallons. To cover an acre an inch deep you will therefore need 27,154 gallons, one quart and about one gill of water. The amount of water allowed by your correspondent would be sufficient to place an acre five and sixtenth inches under water. "In actual practice" your correspondent says he would use twice this amount of water, to compensate for wastage and evaporation, or in other words would flood his land eleven and two-

That much water on a large acreage would make a flood, sure enough. A sudden rainfall to the depth of eleven inches would indeed be a fearful rain.

This proposition to use a double quantity of water to compensate for wastage and evaporation further shows a lack of clearly understanding the case. The irrigator is not expected to take evaporation and wastage into account, but to simply give the land one inch of water as the rain gauge would show that it had been given by a shower of rain. One mch of rainfall weekly would fill every requirement for most soils if well prepared by pulverization. Of course there would be waste in case of the rainfall the same as there would be in the artificial application. Then in irrigation an application weekly of 27,154 gallons of water to the acre is all the water we

A good deal is said from time to time about how much more or how much less water it takes to wet some soils than others. We regard this as another error. It is not probable that there will be much variation in the quantity of water necessary to thoroughly wet any character of good, tillable soil. But it is reasonable to suppose that some soils might require a more frequent application in the course of the season than others, on account of difference in character so far as relates to imbibation and retention of moisture.

ON PEELING PEAR TREES.

In Mr. William Campbell's orchard there is one row of trees loaded down with young Mr. Campbell and other growers who have witnessed the sight attribute it to the fact that something like a year ago cows broke into his orchard, and, attracted population of farmers that makes a country consequence it became necessary to raise driven out. The bark was completely the bark in the region climatically adapted to

the entire trunk of each tree. They are loaded with pears, and it is thought that destroying the bark caused the sap and strength of the tree to go into the fruit. To support this theory there is another tree in a different part of the orchard on which the cows ate off all the bark all the way around on one of the limbs, and this branch is also covered with pears, while the other limbs or the same tree are perfectly barren. The entire orchard is subject to the same condition of heat and exposure. The general tion of heat and exposure. The general pear crop is a failure, and in a number of orchards the amount of fruit will not justify the gathering.—[Jacksonville (Fla.) Times-Union

It may be said that this article is now fairly on its way going the grand rounds of the agricultural press, so styled, of the country. We first saw it as copied into the Florida Farmer and Fruit Grower, where it appeared without comment. Soon afterwards we saw it in other agricultural papers-half a dozen or more. If it had kept out of Texas we'd have given it no particular attention, but now here it comes to us in two of our most prominent publications, copied without comment, and therefore

virtually indorsed, of course It is to be hoped that no Texan will be fool enough to peel his pear tres on any such authories. If there should be one. however, who feels that he must do it, we'd suggest to make the thing entirely sure he'd best get his cows to do it for him. Of course this would necessitate his taking them to the dentist and having them provided with a set of false teeth to match the set nature has given them. An animal without foreteeth above and below couldn't do much in the way of gnawing bark from

a tree, it seems to us. They must have a dandy breed of cows in Florida, so far as relates to front teeth. A mule has both upper and lower teeth in front, and furthermore a mule might be induced to gnaw the bark from a pear tree without much coaxing, but Mr. William Campbell's trees were gnawed by cows. If the writer of that article really knows a mule from a cow he must have meant cows. undoubtedly, for there is no way of fixing things up in any kind of rational manner that would enable us to call a mule a cow.

Verily some of our agricultural literature is extraordinary in the extreme and won-

OUR CORRESPONDENTS.

derful to look upon!

This department is devoted to answering such questions as may be asked by our sub-scribers, which may be of general information. scribers, which may be of general information. Inquiries of personal character that require answer by mail should always have stamp inclosed. Please give full name and postoffice address in addition to any such signature as "Subscriber," or "A. G. D." not for publication, if against the will of the writer, but to admit of direct communication should such a thing be deemed necessary. Address as directed at head of this page.

VINEGAR FROM WATERMELONS.

I saw a statement in the papers some years ago setting forth that Kansas farmers were making quite a quantity of vinegar from watermelons. Please let me know through THE GAZETTE how to make watermelon vinegar, and also what kind of vine gar it is as to quality. Do you think mak-ing vinegar from watermelons would pay! B. F. SAWYER.

Arlington, Tex. We are not informed as to the Kansas methods of making vinegar from watermelons, but "in days before the war" vinegar was often made from watermelous along the Ohio valley, and we can tell you all about how the people made it then and there.

Open ripe melons and scoop out the interior, discarding the rind as unsuited for use. Place in an open vat or barrel and crush finely by chopping with a spade, or by some other means. Let stand twelve hours. when strain or press out the juice. Place the juice in large kettles and boil half an hour, skimming off the "scum" that rises to the top. Transfer from the kettles to a good whisky barrel, and to every thirty rain water and one quart of whisky. Use none other than rain water, as "hard water" would retard fermentation. Place the barrel where sunshine will strike it through a portion of the day. Have the bung up and open, but covered with gauze or mosquito bar to keep out flies. Shake once a day while fermentation is going on. This makes a splendid vinegar, preferred by some to the genuine apple product.

As to whether or not the production of such vinegar would pay must be left to your own judgment. The foregoing will enable you to closely come at the cost you must figure this up against the selling price of good vinegar.

It may be possible that the whisky is not an absolute necessity-a gallon of good vinegar might answer equally as well as a starter. But those old-fashioned folks looked upon the whisky as an indispensable, and so always added it in the proportion named.

CURE FOR SYAKE RITES, ETC. Seeing in the papers that people are dving

from snake bite about San Antonio leads me to feel it my duty to give to the public, through The Gazette, what I know to be a sure remedy for the bite of all poisonous reptiles. Make a solution by adding to hartshorn a little bluestone. Apply to the wound immediately after the bite, and no harm will result. The same solution is also good for the sting of anta or sting or bite of other insects. D. S. CORLEYE. bite of other insects.

Hartshorn is pretty generally regarded as a good remedy for the sting of an insect. We can not exactly see how the bluestone could add to its efficiency, and we think we'd be rather afraid to risk our correspondent's remedy on the bite of a venomous snake, provided we could find anything else

A SUCCESS WITH NAVY BEANS. A letter lately appeared in THE GAZETTE mentioning a failure with navy beans at the hands of the writer. I have long raised the navy bean in Texas, and have never yet met with failure. Please permit me to give your readers my plan of managing the crop. I break my land early in spring and plant when I plant corn, cultivating about the same as I cultivate corn until it is time for

I am also cultivate corn until it is time for the beans to be "laid by."

I am also cultivating the Henderson bush lima bean, and finding it a splendid success. It will stand dry and hot weather better than any other bean I know of. Last year we had a three months' drouth, but this bush lima remained graen, and in bloom all bush lima remained green and in bloom all J. H. ETTER.

This drouth-standing quality in the Henderson bush lima is something new to us, and certainly something which gives it advantages over the ordinary vining varieties, which fail to do well in a very dry time

FINE GYPSUM.

Inclosed please find specimen of a very peculiar chalk; or, at least, I take it to be chalk. I find it in my cellar some four or five feet below the surface, in veins from two to four inches thick. Be good enough to give us through your valuable departof THE GAZETTE some inform

Erath county, Tex. It is gypsium or plaster of paris (sulphate

taken from its native deposit, it must be the most remarkable deposit of gypsum rnown. But for your statement we would think you had bought it at some drug store or paint shop, for it presents every appear ance of being calcined plaster of paris finely pulverized and all ready for use, and it acts exactly like the calcined article under

ON SULPHURING FRUITS

Your article in the correspondent's col-umn of the Fort Worth Weekly GAZETTE July 16 on the present California method of drying peaches is probably correct. In Texas Farm and Ranch, issued July 15, is quite a lengthy article on the evaporating business. I am now in the position of the old sea captain—between two winds. Texas old sea captain—between two winds. Texas
Farm and Ranch goes on to state that
peaches bleached with sulphur contain sulphuric acid, which is very poisonous, giving
the fruit a bad, sickening taste, etc. As you
gave only the California method of drying
peaches, can you now give the evil effects
of that method, if any exist?
Fort Worth Tex

H. E. THAYER. Fort Worth, Tex. All said by us with reference to drying and bleaching fruits in California was upon the authority of Mr. Furnas of that state. one of the best informed men relative to such matters in North America. Considering the authority one ought not long to be standing "between two winds" in the case named.

Mr. Furnas said nothing about the evil effects of bleaching fruits with sulphur, for the reason, we suppose, that there were no evil effects in attendance.

In the first place, there can be no sulphuric acid about peaches bleached by burning sulphur under them. Turn to page 42 of the United States Dispensatory, where read: "Sulphuric acid is obtained by burn ing sulphur mixed with one-eighth of its weight of niter, over a stratum of water, contained in a chamber lined with sheet lead. If the sulphur were burned by itself the product would be sulphurous acid." This clearly settles it that since there was no niter in the case of the bleached fruit there could be no sulphuric acid.

In the second place, there could be no sulphurous acid left in the bleached peaches after they had been dried in the open air following their exposure to the fumes of burning sulphur, for read in the U.S. Dispensatory, page 696: "In open vessels sulphur takes fire at about the temperature of 300 deg., and burns with a blue flame, combining with the oxygen of the air and giving rise to a peculiar gaseous acid, called sulphurous acid." Thus, you see, if it were possible for sulphurous acid to cling to the peaches it, being a volatile gaseous substance, would be bound to float away on exposure to the air in the drying process of the fruit. But even supposing that a portion of it should remain, which could careely be considered possible, it, having in its make-up no element save the volatilized sulphur, could be no more injurious to man than would be the pure sulphur itself.

In the third place, even the dreaded sulphuric acid so dwelt upon, as referred to by you, is not a poison save where taken in large doses, and then it acts only the part of a caustic. To take enough with one's fruit to render the acid injurious would make the fruit so very sour that no man could eat it. For the medical properties of sulphuric acid turn to page 48 of the United States Dispensatory and read: "Sulphuric acid is tonic, antiseptic and refrigerant. Internally it is always administered in a dilute state." Hence we have it that if there was a mirete representation of sulphuric acid in the tried fruit (which there could not possibly be) it would work nothing whatever against the health of the con-

In the fourth place, fruit can be bleached by no other substance than burning sulphur. Evaporated fruits are bleached by the same means as regularly as are fruits dried in the open air-they would not be light colored and nice without it. All the modern and popular dried fruits that so much please the eye and tickle the palate are bleached with sulphur - they would not go on the market without it. So it is now too late to begin railing against sulphuring fruits-the thing is here to stay, and really we cannot see any shade of good reason for why it should not stay. It is not our opinion that any sulphur remains in the fruit, but even should this be otherwise, the per cent is so small as to amount to nothing. We go to the sulphur springs and tip off a giass of water without any thought of bad effects, yet it is quite probable that the said glass of water contains more sulphur than is ever contained in fifty pounds of bleached and dried peaches.

I have noticed in several articles of yours appearing in The GAZETTE, statements to the effect that merely sprinkling water over a garden's surface is not irrigation; that irrigation means running the water between beds in ditches to be soaked off laterally by of the sides of the beds, and that sprinkling water over the beds from a hose and nozzle, or by some other means, can do comparatively little good, even though the water is copiously applied. If you are cor-rect in this how is it that a shower of rain coming in a sprinkle, as it does, breaks a droutn and works so much good to the crop! Is not this something of a knotty question for your philosophy? TRINITY. Tarrant county, Tex.

Not at all knotty. You might come out with your hose and sprinkle with all your might for half a day without being able to wet the soil six inches down, when a shower of rain giving less than half the water you had given would wet the ground a foot deep in ten minutes.

The explanation is easy. You are sprinkling in a dry time. The atmosphere rests upon the surface like a great dry sponge. and takes up the water almost as fast as you put it down, carrying it entirely away. Fully three-fourths of the water applied upon the surface in a very thin sheet, by means of your sprinkling arrangement, is thus lost. With the shower of rain the case is widely different. When it comes the atmosphere is so heavily charged with moisture that no more can be taken up, consequently there is no evaporation whatever All the water cast upon the surface by the shower remains upon it to either soak in or run off. This explains why a slow and gentle rain wets the soil so much more effectually than does a dashing shower: the water all soaks in, and there is no loss from a flow-off over the surfac.

Irrigation water should be sent out in ditches made as narrow as possible to avoid exposure of surface to the atmosphere Of course there will be some loss from evaporation, arrange it as you may, but the less the water surface exposed the less the

MOON PHILOSOPHY. It is pretty generally understood that the moon has more or less influence on crops as well as on many other things. There are some people who do not believe in those moon signs, but for myself i am not one of

department with much interest, and I need department with much interest, and I need not deny it, with much profit, but as yet I have seen nothing from you with reference to moon influences. If there is anything good to the farmer or gardener in an understanding of these moon influees I think you ought to let the moon come in along with your other good things. North Side. NORTH SIDE.

your other good things. Fort Worth, Tex. We are not much stuck on moon signs and moon influences, and so have thought best to entirely turn the moon over to Professor Foster for use in his business of weather prognostications after his own way. But his way is not the way of the masses who pin their faith to the moon, as we undersund it. They believe that frost is more apt to work damage at certain stages of the moon, as to full or change, than at others, that fences laid at certain stages will stand better than if laid at any other time, and that the meat of hogs killed at certain stages will shrink and be of far less value than would have been the case had the hogs been killed while the moon had been in the

proper condition. Many of these moon philosophers will tell you that they know of these effects from their own personal observations, thus entirely cutting you off from any chance at arguing the question with them. So all one can say in such cases is to say nothing and let them depart in peace, carrying along with them the conviction that they have effectually flattened out all opposition. They never attempt to offer proof-it is all simply assertion on their part.

Now, when we get to be a believer in moon influences we'll not do that way. We have in mind a case that we'll invariably drag out in substantiation of our position. The affair is said to have come off near Huntsville, Ala. In that pleasant little city there lived a lazy old colored individual known to the citizens as Uncle Ben. A zealous fisherman was Uncle Ben, and one pleasant day he might have been seen on the shores of Indian creek gleefully taking a two-pound mud cat from his line. It was strung on a bit of twine and left tied in the water, while Uncle Ben tried his chances a little further down the stream.

In Uncle Ben's absence another fisherman came along, with a half-pound cat on a string. Uncle Ben's prize caught his eve and some bad spirit at once suggested a swap, so he took off the big fish substituted the little one, tied the twine just as Uncle Ben had left it, and stood back among the bushes to see what would happen next,

In due time Uncle Ben returned chuck ling over the good fortune that had giron him a two-pound cat, and probably enjoying in imagination the fish fry that would resuit on the next morning. He took hold of the twine, the small fish came to the surface, his eyes swelled to an enormous size. and for a moment he seemed completely dumbfounded. But Uncle Ben was a philo sopher. He thought of the whys and the wherefores, and in a moment he had the mystery as clear as mud. Holding up the wiggling little cat, he exclaimed:

"Well, bless de good lawd! how dis fish am swunk! an' it all comes o' catchin' it on de ole of the moon!"

This is the only proof we have to offer, as yet, leaning towards an establishment of the theory that the moon does wield an influence on common things,

I ship you to-day by Pacific express one-

PEARS AND IRRIGATION.

half dozen Le Conte pears that grew in my vard among Bermuda grass, or sward grass as you name it. The Le Conte and Duchess pears have grown almost to perfect or my yard. I have about thirty trees of the Le Conte that I nope will bear next year. I am a constant reader of your articles in THE GAZETTE, especially these on irrigation. Have been experimenting for the past two years in a small way by irrigating my your and and conden. my yard and garden. The results have been highly satisfactory. I have a very fine well, from which I elevate water to a tank twelve feet above ground. From this tank pipes lead to all parts of my yard and garden, as well as into my house and stable. As a result I am now eating my third crop of snap-beans, and have my fourth crop planted. Can fully agree with you as to the increase of vegetation by irrigation. I spend all of my leisure time at work in my yard and garden, as much for exercise and health as for the profit of the thing, which last is very gratifying. J. M. BUCHANAN. Whitesboro, Tex.

The pears were as fine specimens of the Le Coute, apparently, as ever grew anywhere. In our opinion the world has no better fruit belt, once it is developed in accordance with Texas requirements, than lies all along the southern side of Red

Mr. Buchanan's statements relative to his irrigation experiments, while in strict accord with all experiences that we have heard of in the same direction, are especially interesting. Three crops of snapbeans already, with the fourth crop started, while not a man living in Texas and operating on the old plan, without artificial water supply, has had more than one, and that one nothing to boast of. It does seem that, in the face of such facts, our people ought to soon get their eyes opened to the importance of irrigation.

WINDMILL IRRIGATION

I am satisfied that the Fort Worth Ga-ZETTE is doing a grand work for Texas in its persistent a vocacy of irrigation. You are evidently correct in your position when you advance the idea that with ut irrigation Texas is fully as good, in an agricul-tural way, as any other state of the Union not resorting to artifficial vator supply for crops, but that with irrigation she would e far better than any other state even the system.

I am thinking of doing a little in the way of irrigation next year myself, by lifting water from a fine well on my place with a windmill. Do you think a good windmill would lift water enough from a well thirty eight feet deep to thoroughly irrigate six acres? Progress. Eastland county, Tex.

Your well and wind-mill arrangement would scarcely irrigate that much land to perfection, we think. It might do your crops much good, but it takes a pretty large quantity of water to thoroughly irrigate six acres of land. For our own part we have no great amount of faith in wind-mill irrigation save on a small scale.

The best wind-mill irrigation arrangement that we ever saw we met with at San Marcos, Tex., eleven years ago-had seen nothing like it before and have seen nothinglike it since. There was a vegetable garden of about three acres under the system. The land sloped gently but regularly from back towards the San Marcos river. Along this highest side of the garden ran a trough made by nailing together two sixinch boards in the shape of a V. One end of the trough was on the ground, while the other end was elevated sufficiently to admit of an easy flow of water its entire length. It was supported along on posts so set as to give it the desired dip. Eight feet apart along the trough were nalled on the sloping sides (inside) a pair of small clears to hold a little triangular gate slipped between It is grashm or plaster of paris (sulphate them. Since your association with THE GAof line) and if the sample sent is just as zerre I have been reading your agricultural onward flow of the water as desired. There well watered on the surface, as a rule, but

were two of these little gates. Just above each gate-place was cut in the trough, and on the side next to the garden, a shallow notch of sufficient size to discharge all the water flowing into the trough.

On the bank of the cSan Marcos was wind-mill which lifted water from the stream and sent it in a pipe to be discharged into the highest end of the trough, And now for how the system was made to work

There were two of the little triang blocks or gates. These were shoved don between the two sets of cleans mouned the most elevated end of the troops and water-tight. The water was toand running down to the nearest gars filled the trough to the notch and though out, thence making its way along sun ditches arranged for it between plant her-When eight feet of garden had the sufficiently watered the upperment sale was transferred to the cleats next bear the second gate, as set ut the beginning, and the water flowed out at the second notch to plater another might for of garden truck. On this routine the wark was kept up constantly until the cut re garien had been gone over. By this time the eight feet of truck first watered was acceling water again, so the gates were much to the highest end of the trough and the going over followed up as in the

This was not what could be called to fect irrigation, but it certainly was a great good to the crops, and made a comparatively small water supply do more Qual could have been done with it by any many arrangement that we know of

MUST HAVE YOUR ADDRESS. Please oblige me by giving through Tax GAZETTE full instructions for the -11

The writer does not favor us with a real name or location. If he had roughly note at the head of these columns he would have seen that he was violating or man-And he is not alone in that kind of the for we receive lots of letters put means the same way, and so does our warming ket. Gentley in, you are simply throwing away your valuable time. While we want much prefer to print your name and a dein full with your letter, we are still willing to give you our attention where only a name plume is to appear, provided, we have a name and address in full for our own rot erence; but without this, your favor no not be considered for a moment. Some of our best letters are thrown away or this account. What's the matter with you gen tlemel Many of your letters are a let something pertaining to the coll of Tex-Are you ashumed to be known to ago exa friend to the Lone Star star

POPULAR SCIENCE

THE BLACK PRAIRIE REGION OF TEXAS.

Borders of the Black Prairie-8 cface and Productiveness-Sub-Divisions and Structure Timber and Water

Our frequent reference to the black prairie region in Texas has caused as to be ceive many letters from dis ant realers of THE GAZETTE asking for information as to what manner of formation or country the black prairie is. We take this method of answering all our correspondence interested with reference to the matter, arating up-Professor Robert T. Hill's paper on t cretaceous rocks of Texas, as appearing to the first annual report of the state ground cai survey, for the facts.

Professor Hill says of the black prains egion of Texas that it occur gated area extending the length of the state from Red River to the Rio Grande, I's eastern border is approximately the south western termination of the great Atlantic timber belt. The Missouri Pacific and the International railroads from Denison to San Antonio approximately mark is a western edge. A little south of the center, along the Colorado river, the black prairie is to stricted to its narrowest limits.

In general the black prairie region of Texas consists of a level plain, impercepti bly sloping to the southeast, varied only by gentle undulations and deep drainage valeys, unmarked by precipitate empons. It is transcrited at intervals by the larger streams, whose deep-cut valleys, together with their side streams, make indentations into the plain, but not sufficient to destroy the characteristic flatness of its wided. vides-remnants of the original plant, or topographic marine base-level which has not been completely scored by its still utcful drainage system. The altitude of the black prairie plain is from 600 to 800 feet above the level of the sea.

The surface of most of the black prairie region of Texas is a deep blue clay miles which when wet becomes excessive, tenacious or "sticky," a fact which often causes it to be called black waxy prairie-It is very rich in lime, and this, action upon decomposing vegetable matter, causes the black color. The soil is exceedingly fer tile, and almost every foot of the black prairie is susceptible of a high state of calfivation, it makes up one of the largest continuous agricultural regions in 12 United States. Large crops of could and corn, with other minor crops, and australia raised upon these fertile lands, though at yet they are but thinly settled as a whole

The black prairie of Texas is subdivide longitudinally into four parallel strips of country, differing slightly and distinguish able only by slight differences in top graphy, and in the underlying rocks. The easternmost of these divisions north of the Brazos river is distinguishable by the 90 currence of sand in its black soil, and occasionally purer belts of sand. Between the Brazos and the Colorado rivers, however. the sand is scarcely perceptible. Immedi ately interior of this is located the larger and most characteristic area, which marked by the stiffest of the black war: clay soils. Upon digging through this area the substructure is found to consist of light blue or yellow calcareous clay. This, the main portion of the black prairie, constitutes fully two-thirds of its total area

The black prairie region of Texas mainly treeless, though occasionally market here and there by handsome clumps of evergreen oaks. Along the western border well up, as about Dallas, the lower cross timbers approach, and hence give more trees than further down. We may add that this black prairie region is not very